

Memorandum

To : Randall Iwasaki, Deputy Director
Maintenance and Operations

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From : Tom Hallenbeck
District Director
District 9 - Bishop

Subject : Briefing on Low-level Radioactive Waste Transportation through California

District 9 has followed developments in the transportation of radioactive waste to or from southern Nevada for several years. There are three types of radioactive waste that are or may ship to or from either the Nevada Test Site (NTS) or Yucca Mountain, immediately adjacent to the NTS. They are:

- Low-level waste and mixed wastes, generated through nuclear weapons development and shipped to the NTS for burial;
- Transuranic waste, which is waste that includes radioactive elements, like plutonium, that are heavier than uranium; and
- Spent nuclear fuel and High-level waste, generated by both commercial and defense nuclear reactors.

In order to understand our concerns regarding the recent decision by the Department of Energy (DOE) to use SR127 for shipments of low-level radioactive waste to the NTS, we need to also provide a brief discussion of the other wastes, and transportation issues relating to them.

Low-level Radioactive Waste

The Nevada Test Site (NTS) in Southern Nevada has been used by the U. S. Department of Energy (DOE) for the disposal of low-level radioactive wastes and mixed wastes generated by the weapons program since the early 1960's. Shipments to the NTS have historically been by truck, with the routing determined by the carrier in conformance with 49 CFR 397.101 (Routing of Class 7 [Radioactive] Materials). The routes used have generally passed through Las Vegas, Nevada along I15 and US95. In September 1998 the DOE issued a draft Environmental Assessment on a proposal to ship wastes by rail to an intermodal transfer facility, with truck transportation as the final leg of the journey. Included as part of the proposal was the avoidance of the Las Vegas Valley. Some of the alternatives included the use of an intermodal transfer site in California (at Barstow or Yermo) and the use of SR127 for the final leg of the journey. The all-truck alternatives in this Environmental Assessment also avoid the Las Vegas Valley and make use of SR127 as an alternative.

Concerned that they would soon become a major pathway for low-level radioactive waste to the NTS, and that this might set a precedent for future high-level radioactive waste shipments to Yucca Mountain, Inyo and San Bernardino Counties contacted their congressional delegations. Senators Feinstein and Boxer, and Congressmen Jerry Lewis (Chairman, California Republican Congressional Delegation) and Sam Farr (Chairman, California Democratic Congressional Delegation) sent letters to Secretary of Energy Bill Richardson supporting the counties' argument that shipping radioactive waste from the east into California for a destination in Nevada made little sense.

The low-level radioactive waste shipments under consideration are not HRCQ, and the carrier is not constrained from using SR127. However, the carrier for low-level radioactive waste shipments must meet the requirements of 49 CFR 397.101, which states that the carrier shall:

Ensure that the motor vehicle is operated on routes that minimize radiological risk; and


Consider available information on accident rates, transit time, population density and activities, and the time of day and the day of week during which transportation will occur to determine the level of radiological risk.

In order to accommodate Nevada and the City of Las Vegas, the DOE has been shipping on a northern summer route through rural Nevada. DOE has been looking for southern, winter routes for several months. In December, 1999 they announced their decision to split the winter shipments between 160 in Nevada (through Pahrump) and 127 in Inyo and San Bernardino Counties. There will be up to 12 to 15 shipments per week from Fernald, Ohio (the major location currently shipping material for disposal at the NTS) with approximately half being routed up 127.

The routing in California is: I40 to Nipton Road, Nipton Road to I-15, I-15 to SR127, SR127 to the state line.

Shipments that require placarding will be placarded class 7. Shipment is in strong, tight metal containers, and experience with these shipments is that they travel inside enclosed trailers.

The last incident that occurred involving these shipments was a leak of liquids, which was detected in the vicinity of Kingman, AZ. In that instance, there was no identified release of radioactive materials. Shipments were halted for about a year while defects in the shipping containers were investigated and corrected. District 9 continues to be concerned with the use of secondary roads for the shipment of hazardous materials when there are shorter, faster, interstate highway routes available and no explicit analysis has been performed demonstrating the improved safety on routes using these secondary roads. Detouring to reduce political pressures while increasing the mileage and time traveled sets a dangerous precedent for both low-level and high-level radioactive waste shipments.

 The DOE has been storing transuranic waste at the NTS that is destined for disposal at a facility constructed near Carlsbad, New Mexico called the Waste Isolation Pilot Plant (WIPP). Shipments may occur in 2005 or later. The shipping campaign from the NTS to WIPP will total less than 100 shipments, and all shipments will be in Type B shipping casks (casks certified by the Nuclear Regulatory Commission, and designed to withstand severe impact). Routing will be generally along the routes determined by use of high-level routing restrictions, except that the DOE is planning on using SR127 to I15 for shipments outbound from the NTS.

Spent Nuclear Fuel and High-level Radioactive Waste:

The DOE is studying Yucca Mountain, Nevada to determine its suitability as a disposal site for the nation's spent nuclear fuel and high-level radioactive waste. The draft is silent on route selection, but does some analysis of generic routes. Under the mostly truck scenario described in the Draft Environmental Impact Statement nearly 50,000 truck shipments would occur over 24 years. Estimates by others (such as the State of Nevada) result in a substantially higher number of truck shipments. ~~Scenarios that employ rail, while reducing the number of shipments, may require heavy-haul truck shipments (total weight of the cask and truck may approach 300 tons).~~

Under California Government Code, the California Highway Patrol (CHP) is the hazardous materials routing authority for the state. In the case of highway route controlled quantities (HRCQ), the CHP has designated preferred routes that include I15 to Nevada but do not include SR127. However, given the move to shift low-level shipments onto SR127, and the use of SR127 for transuranic shipments from the NTS, we can assume that it is possible that high-level radioactive waste shipments may also travel on SR 127.

Cumulative Impact:

The transportation of radioactive materials creates both real and perceived risks. Radioactive materials transportation campaigns have faced tremendous public opposition due to fears about the potential exposures involved in both routine transport and under accident conditions. In addition to potential response to a radiological incident resulting from the transportation of materials to the proposed repository at Yucca Mountain, Caltrans has to consider the potential impact to the transportation system from the routine shipment of radiologic materials to Yucca Mountain. Finally, Caltrans must consider the cumulative impact of radioactive materials shipments by the DOE from all programs. In the Waste Management Programmatic Environmental Impact Statement, the DOE Office of Environmental Management considered the potential cumulative impact of the shipment of low-level waste, low-level mixed waste and high-level waste within their system. This document states:

"The largest number of shipments to or from a single site could occur at NTS as a result of the shipments of LLMW and LLW and of shipments of HLW if Yucca Mountain is found to be suitable as a repository for HLW. A combined

total of more than 295,000 truck shipments or more than 106,000 rail shipments of waste could occur at NTS, or about 118 truck shipments or 42 rail shipments per day (assuming receipt of shipments during 250 days per year). “

District 9 has collected information on improvements that may need to be made on SR127 as possible mitigation for these shipments. They include curve corrections, widened shoulders, pavement improvements due to substandard base materials, and realignments to move the roadway out of dry washes and the Amargosa riverbed. We have also collected data on vehicular mix and traveler information on this route.

District 9 continues to monitor developments in both low-level and high-level radioactive waste shipments, but lack of specific policy direction at the state level makes it difficult to respond effectively. Recent comments on the Draft Environmental Impact Statement for the proposed high-level radioactive waste repository at Yucca Mountain, Nevada were compiled at the state level. It is clear from our interactions with the California Energy Commission staff that there is a need for clear policy direction from the Governor's Office. Within District 9, our general policy has been not to oppose shipments within California, but to resist the use of non-interstate routes without assessment of the potential impacts and development and implementation of any necessary mitigation measures. This assessment has not yet been done to our satisfaction.